

# Abstract Submission Form



## 2010 ITE Western District Annual Meeting

San Francisco, CA  
June 27-30, 2010

Paper Title:

Lessons Learned from Developing the First Large-Scale Hybrid Meso-Microsimulation Model in Practices

Relevant Session/Topic:

Travel Models and Microsimulation

Author:

Name: Surachet Pravinvongvuth

Employer: DKS Associates

Mailing Address: 1000 Broadway Suite 450, Oakland CA 94607

Phone #: (510) 267-6644

e-mail: scp@dksassociates.com

Co-authors:

Co-author 1: William R. Loudon

Co-author 2: Michael V. Mauch

**Abstract:** 250 words maximum. Use 12 point Arial font, single space.

The first large-scale hybrid meso-microsimulation model, of which both the mesosimulation and microsimulation parts of the network are simultaneously simulated within the same run, has been developed to model a 50-mile corridor that also includes parallel arterials, connectors, and state routes within the range of four miles. The motivation for this hybrid modeling approach arises from the need to have a simulation tool that can model a corridor that is too large for use of a traditional microsimulation approach. Even though microsimulation allows the highest detail for assessment, the size of the network that can be analyzed is limited due to the computational expense and sensitive to gridlock. In contrast, mesosimulation allows relatively less detailed assessment but can cover a larger network. The hybrid meso-microsimulation model used in this study allowed practitioners to account for the impact of system management improvements such as ramp metering on a wide area based on speed-density functions and a focused area based on car-following and lane-changing logic. Each vehicle is generated based on a planning O-D trip table, and travels based on its predetermined path. Vehicles traversing between the two areas are consistently simulated but with different fidelities. The advantages/disadvantages of using the hybrid meso-microsimulation modeling approach relative to traditional approaches will be identified and guidance will be provided for implementation in other corridors. The presentation will also provide a description of how the tool was used to evaluate the system management strategies tested.

**Abstracts are due by 5:00pm on Monday, January 11, 2010.**

e-mail your abstracts to:

Amit Kothari, P.E., (Technical Chair)  
San Francisco Municipal Transportation Agency  
e-mail: [amit.kothari@sfmta.com](mailto:amit.kothari@sfmta.com)  
Ph. (415) 701-4462

In your e-mail, the *Subject Line* must read “2010Abstract-Author’s Last Name” For example, a submittal by Mr. Smith would have a *Subject Line* “2010Abstract-Smith”. The file name for the attached abstract would also be the same “2010Abstract-Smith.doc” or “2010Abstract-Smith.pdf”.